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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

OCT 13 2011

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

Article Number: 7010 2780 0001 2212 1613

Mr. John Heer, Assistant General Counsel
Electrolux North America, Incorporated
20445 Emerald Parkway, S.W., Suite 250
Cleveland, Ohio 44135

RE: Electrolux Home Products site
601 E Central Avenue
Jefferson, Iowa 50129
EPA ID #IAD047055140

Dear Mr. Heer:

Thank you for meeting with us via telephone conference on Wednesday, October 5, 2011, to discuss the ongoing investigation of environmental contamination at this site. We are pleased that you are considering this opportunity to complete the investigation with the U.S. Environmental Protection Agency.

As a result of a review of the EPA files on this Electrolux Home Products site and information available from the Iowa Department of Natural Resources (IDNR), we have determined that this site requires additional investigation and possibly remediation. The EPA would like to present this opportunity to participate in a Collaborative Agreement to conduct an expedited investigation of historical contamination, especially trichloroethylene (TCE) and total extractable petroleum hydrocarbons (TEH), at the Electrolux Home Products, Incorporated site in Jefferson, Iowa.

This investigation will be the equivalent of a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI). We are aware that Electrolux has conducted a Phase II site investigation already. The EPA is agreeable that the information from this recent investigation be incorporated into the report for a more rigorous investigation.

Enclosed with this letter is the EPA's proposed Statement of Work (SOW) for this investigation. While we are not proposing this SOW for negotiation, we are open to clarification and discussion.



If you agree to conduct this work, the EPA will expect you to draft a commitment statement to be signed by a responsible facility representative. Please review this SOW and contact me within 14 days of your receipt of this letter to discuss possible dates for a meeting or conference call to discuss this Collaborative Agreement and the SOW. After the meeting the EPA will provide a date by which we expect to receive an indication of agreement to conduct the work on these terms. If you do not respond by that time or if the work does not proceed according to the EPA-approved Work Plan, and on schedule, the EPA may, at its discretion, proceed under available authorities, including the issuance of an Order under the authority of RCRA and/or Comprehensive, Environmental Response, Compensation and Liability Act (CERCLA).

If you have any questions you may contact me by phone at (913) 551-7478 or by email at hutchison.cynthia@epa.gov. We look forward to working with you on finishing this site investigation.

Sincerely,



Cynthia L. Hutchison
Environmental/Geological Engineer
RCRA Corrective Action and Permits Branch

Enclosures

cc: Douglas S. Arnold, Alston and Bird,
Cal Lundberg, IDNR
John Woodland, IDNR

Statements of Work Electrolux Home Products

IAD047055140
601 E Central Avenue
Jefferson, Iowa

The following are EPA's expectations for implementing the Statement of Work (SOW).

Reporting: Electrolux Home Products (Electrolux) shall submit to EPA the results of all sampling and/or test or other data generated by, or on behalf of it, in performing the work required by the SOW.

Sampling: Upon EPA's request, Electrolux shall provide or allow EPA or its authorized representatives to take split or duplicate samples collected by Electrolux pursuant to this SOW and any EPA-approved work plan. Electrolux agrees to notify EPA at least thirty (30) days prior to any sampling event or field work.

Access: Electrolux agrees to provide to EPA, and its agents and representatives, access to the Facility at all reasonable times to conduct any activity to monitor the work performed by Electrolux pursuant to this SOW. If Electrolux does not own the Facility, it shall include EPA as a party to whom access is to be provided in any access agreement(s) negotiated with the property owner.

Certification: All submittals made to EPA pursuant to this SOW shall be certified by a responsible corporate officer from Electrolux.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete."

Approvals: Electrolux agrees to submit all work plans and reports detailed in the SOW to EPA for review and approval.

Records: Electrolux agrees to retain all documents and sampling results for five (5) years following the completion of work performed pursuant to this SOW.

Final Remedy: At the completion of the work detailed in the SOW, EPA will evaluate the data to determine if additional work (e.g., interim measures, additional investigation, corrective measures study, permit, and/or corrective measures implementation) at the Facility will be required of Electrolux.

All reports and work plans shall be submitted with a copy. All documents submitted to EPA should be sent to:

Cynthia L. Hutchison
Project Manager
AWMD/RCAP
U.S. EPA, Region 7
901 North 5th Street
Kansas City, Kansas 66101.

**RCRA FACILITY INVESTIGATION (RFI)
Statement of Work**

PURPOSE

The purpose of this RCRA Facility Investigation ("RFI") is to determine the nature and three-dimensional extent of releases of hazardous wastes and/or hazardous constituents from regulated units, hazardous waste management units (HWMUs) solid waste management units (SWMUs), areas of concern (AOCs) and other source areas at Electrolux, and to gather all necessary data to support a Corrective Measures Study. The RFI includes the collection of site-specific data to evaluate any human health and/or ecological impacts of contamination from the facility. The Facility shall furnish all personnel, materials, and services necessary for, or incidental to, performing the RCRA facility investigation.

SCOPE

The RCRA Facility Investigation consists of three tasks:

TASK I: RFI WORK PLAN REQUIREMENTS

- A. Description of Current Conditions
- B. Quality Assurance Project Plan
- C. Sampling and Analysis Plan
- D. Vapor Intrusion Characterization Work Plan
- E. Public Involvement Plan

TASK II: RCRA FACILITY INVESTIGATION

- A. Environmental Setting
- B. Source Characterization
- C. Contamination Characterization
- D. Potential Receptor Identification
- E. Data Analysis
- F. Site Conceptual Model
- G. Risk Assessment (If required by EPA)

TASK III: RFI REPORTING

- A. RFI Work Plan/Description of Current Conditions
- B. RFI Report
- C. Progress Reports

In accomplishing the above Tasks, the Facility shall comply with the provisions of this SOW; the *RCRA Corrective Action Plan*, EPA/520-R-94-004, OSWER Directive 9902.3-2A, May 1994; and all applicable EPA guidance.

TASK I: RFI WORK PLAN REQUIREMENTS

Within sixty (60) days of the date of the Facility Commitment Letter, the Facility shall prepare an RFI Work Plan to support and guide the work necessary to characterize the nature and extent of contamination and complete all requirements listed in Task II of this Statement of Work. This RFI Work Plan shall include the components described below and a schedule for completing all requirements listed in Task II of this Statement of Work. During the RCRA Facility Investigation, it may be necessary to revise the RFI Work Plan to increase or decrease the amount and/or type of information collected to accommodate the facility-specific situation or to perform subsequent phases of the RFI. EPA will review and approve or modify this submittal. The RFI Work Plan shall include the following elements:

A. Current Conditions

The Facility shall submit for EPA approval a report providing the background information pertinent to the facility. This report shall include information gathered during any previous investigations, inspections, interim measure activities and any other relevant data, which helps to identify potential sources of contamination and characterize the current site conditions. In addition, this report shall assess whether any contaminated groundwater plumes are migrating off-site. EPA will review and approve or modify this submittal.

1. Facility Background

The Facility's report shall summarize the regional location, pertinent boundary features, general facility physiography, hydrogeology, and historical use of the facility for the treatment, storage, or disposal of solid and hazardous waste. The Facility's report shall include:

a. Map(s) depicting the following:

- i) General geographic location;
- ii) Property lines, with the owners of all adjacent property clearly indicated;
- iii) Topography (with a contour interval of 10 feet and a scale of 1 inch = 100 feet), water ways, all wetlands, flood plains, water features, drainage patterns;
- iv) All tanks, buildings, utilities, paved areas, easements, rights-of-way, and other features;
- v) All solid or hazardous waste treatment, storage, or disposal areas active after November 19, 1980;
- vi) All known past solid or hazardous waste substance treatment, storage, or disposal areas and all known spill, fire, or other

accidental release locations where hazardous substances may have been released or disposed;

- vii) All known past and present product and waste underground tanks or piping;
 - viii) Surrounding land uses (residential, commercial, agricultural, recreational); and
 - ix) Location and construction details of all production and groundwater monitoring wells at and within a one mile radius of the site. These wells shall be clearly labeled. Monitoring well installed depth, well screen interval, casing diameter, and top of casing elevations shall be included (these elevations may be included as an attachment).
 - x) All maps shall be consistent with the requirements set forth in 40 C.F.R. Section 270.14 and be of sufficient detail and accuracy to locate and report all current and future work performed at the site;
- b. History and description of ownership and operation; solid and hazardous waste generation; and treatment, storage, and disposal activities at the facility;
 - c. Approximate dates or periods of past product and waste spills, identification of the materials spilled, the amount spilled, the location of the spills, and a description of the response actions conducted (local, state, or Federal response units or private parties), including any inspection reports or technical reports generated as a result of the response; and
 - d. Summary of past permits requested and/or received any enforcement actions and their subsequent responses.

2. Nature and Extent of Contamination

The Facility's report shall describe the existing information on the nature and extent of contamination.

- a. The Facility's report shall summarize all possible source areas of contamination. This, at a minimum, should include all regulated units, SWMUs, HWMUs, AOCs, spill areas, and other suspected source areas of contamination. For each area, the Facility shall identify the following:
 - i) Location of unit/area (which shall be depicted on a facility map);
 - ii) Quantities of solid and hazardous wastes;
 - iii) Hazardous waste or hazardous constituents, to the extent known; and
 - iv) Identification of areas where additional information is necessary.

- b. The Facility shall prepare an assessment and description of the existing nature and extent of contamination. This should include:
 - i) Available monitoring data in tabular form and qualitative information on locations and levels of contamination at the facility;
 - ii) All potential migration pathways including information on geology, soils, hydrogeology, physiography, hydrology, water quality, meteorology, and air quality; and
 - iii) Potential impact(s) on human health and the environment, including demography, groundwater and surface water use, and land use.

3. Implementation of Interim Measures

The Facility's report shall document interim measures which were, or are, being undertaken at the facility. This report shall include:

- a. Objectives of the interim measures: how the measure is mitigating a potential threat to human health and the environment and/or is consistent with and integrated into any long-term solution at the facility;
- c. Design, construction, operation, and maintenance requirements;
- d. Schedules for design, construction, and monitoring; and
- e. Schedule for progress reports.

B. Quality Assurance Project Plan (QAPP)

To ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented, the Facility shall prepare a QAPP to document all monitoring procedures, sampling, field measurements and sample analysis performed during the investigation to characterize the environmental setting, source(s), and contamination as required in Task II. The Facility shall use quality assurance, quality control, and chain-of-custody procedures approved by the EPA. The QAPP should be prepared in accordance with the EPA *Requirements for Quality Assurance Project Plans*, EPA QA/R-5, EPA/240/B-01/003, March 2001, and following EPA *Guidance for Preparing Quality Assurance Project Plans*, EPA QA/G-5, EPA/240/R-02/009, December 2002. The minimum elements of Facility's quality assurance program for data collection activities are in Chapter One of EPA publication SW-846, entitled *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*. The QAPP shall include a description and qualifications of all personnel performing or directing the RFI, including contractor personnel. Standard operating procedures (SOPs) shall be included as an attachment to the plan(s) if SOPs are cited in the text.

The RFI Work Plan shall include Data Quality Objectives (DQO) for each data collection activity to ensure that data of known and appropriate quality are obtained and that data are sufficient to support their intended use(s).

DQOs are performance and acceptance criteria that clarify study objectives, define the appropriate type of data, and specify tolerable levels of potential decision errors that will be used as the basis for establishing the quality and quantity of data needed to support decisions. The DQOs shall be prepared consistent with EPA Guidance documents; "Guidance on Systematic Planning Using the Data Quality Objectives Process" EPA QA/G-4, EPA/240/B-06/001, February 2006; "Guidance for Developing Quality Systems for Environmental Programs" EPA QA/G-1, EPA/240/R-008, November 2002; and any subsequent revisions or editions.

The Facility shall monitor to ensure that high quality data is obtained by its consultant or contract laboratories. The Facility shall ensure that laboratory methods shall be in accordance with the latest approved edition of "Test Methods for Evaluating Solid Waste (SW-846)," the most current version of the Waste Management System; Testing and Monitoring Activities; Final Rule: Methods Innovation Rule, or other methods deemed satisfactory to EPA. If methods other than EPA methods are to be used, the Facility shall specify all such protocols in the applicable Work Plan. EPA may reject any data that does not meet the requirements of the approved Work Plan and EPA analytical methods and may require re-sampling and additional analysis. The Facility shall ensure that all laboratories it uses for analyses participate in a quality assurance/quality control (QA/QC) program equivalent to the program that EPA follows.

C. Sampling and Analysis Plan (SAP)

The SAP shall outline the field investigation activities which will be conducted to determine the nature and extents of contamination associated with the Facility, and fulfill the purpose and objectives of the RFI as described in Task II. The SAP shall be prepared in accordance with EPA *Guidance on Choosing a Sampling Design for Environmental Data Collection*, EPA QA/G-5S, EPA/240/R-02/005, December 2002. The SAP at a minimum should include the following:

1. A description of the site, its regulatory status;
2. Clearly stated objectives for the specific sampling event, including the ultimate goal and/or use of the sampling data and the techniques which will ensure that the samples will provide the required data;
3. A description of all SWMUs, AOCs and HWMUs requiring characterization along with the sampling approach/rationale for defining the nature and extent of contamination and its rate of movement for all potentially impacted media;
4. A discussion of sampling procedures which shall include: sampling locations, field quality assurance samples, analyses to be conducted including analytical method numbers, sample containers, sample preservation and shipment, and chain-of-custody procedures;
5. Monitoring well and soil boring location, monitoring well construction details (installed depth, well screen interval, casing diameter, and top of casing elevations), installation, development and sampling procedures; and

6. The SAP shall detail the planned sampling approach for any sampling required to meet the requirements of Task II for characterization the environmental setting, defining the sources of releases, and identifying potential receptors and human health and/or ecologic impacts.

D. Vapor Intrusion Characterization Work Plan

At the request of EPA, the Facility shall prepare a Vapor Intrusion Characterization Work Plan (VIC Work Plan) to conduct and document the procedures used to investigate and characterize contamination in vapor in the soil, under the slab and within the structure(s) of the facility and any off site location, resulting from contaminant releases at the facility.

1. The VIC Work Plan shall be developed and performed in accordance with current EPA guidance including, but not limited to the following and all subsequent EPA approved guidance:
 - a. U.S. EPA 2002, *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)* Office of Solid Waste and Emergency Response, Washington, D.C.; and
 - b. ITRC (The Interstate Technology & Regulatory Council), 2007, *Vapor Intrusion Pathway: A Practical Guideline*; and ITRC, 2007, *Vapor Intrusion Pathway: A Practical Guideline* Vapor Intrusion Team, Washington, D.C.
2. The investigation shall include, but not be limited to, the following information:
 - a. Specific origin (source) of each contaminant release to soil or surface water and sediments causing soil vapor contamination;
 - b. Description of likely discharges locations of any plume(s) originating from the facility, resulting in soil vapor contamination and the extent of contamination;
 - c. Horizontal and vertical direction of vapor;
 - d. Identification and quantification of vapor contaminants
3. Upon EPA approval of interim measures vapor intrusion remedies, Facility will implement the remedies, as appropriate, to preclude human exposure to any hazardous vapor emanating from the former site of Facility and/or migration of such vapors from the site.

E. Public Involvement Plan

The Facility shall submit a Public Involvement Plan detailing how the facility will inform the public of investigation activities and results. This plan shall conform to EPA's *RCRA Public Participation Manual*, EPA/530-R-96-007, September 1996. All Public Involvement Plans prepared by the Facility shall be submitted to the implementing agency for comment and approval prior to use. Facility never appears to represent or speak for the implementing agency before the public, other government officials or the media.

A schedule for community relations activities shall be included in the Public Involvement Plan. EPA will review and approve or modify this submittal.

TASK II: FACILITY INVESTIGATION

Within the timeframes specified in the approved RFI Work Plan, the Facility shall conduct investigations necessary to: characterize the facility (Environmental Setting); define the source(s) of contamination (Source Characterization); define the nature and extent of contamination (Contamination Characterization); identify actual or potential receptors (Potential Receptor Identification), and determine the impact(s) of contamination on human health and/or ecological receptors (Risk Assessment). The investigation should result in data of adequate technical quality to support the development and evaluation of the corrective measures alternative(s) during the Corrective Measures Study.

The site investigation activities shall follow the plans set forth in Task I. All sampling and analyses shall be conducted in accordance with the approved QAPP. All sampling locations shall be documented in a log and identified on a detailed site map. All results of sampling, testing, modeling or other data generated (including raw data if requested) by the Facility, or on the Facility's behalf, during implementation of this SOW shall be validated by the Facility and submitted to EPA in the next quarterly progress report. The data should be tabulated chronologically by media. Any deviations from the QAPP and chain of custody procedures in approved Work Plans must be approved by EPA prior to implementation; must be documented, including reasons for the deviations; and must be reported in the applicable report.

A. Environmental Setting

The Facility shall collect information to supplement and verify existing information on the environmental setting at the facility. The Facility shall characterize the following:

1. **Hydrogeology** - The Facility shall conduct a program to evaluate hydrogeologic conditions at the facility. The following information, at a minimum, must be included in the RFI Report:
 - a. **Description of the regional and facility-specific geologic and hydrogeologic characteristics affecting groundwater flow beneath the facility, including:**
 - i) **Regional and facility-specific stratigraphy;**
 - ii) **Structural geology: description of local and regional structural features (e.g., folding, faulting, jointing);**
 - iii) **Depositional and erosional history;**
 - iv) **Identification and characterization of recharge and discharge areas;**
 - v) **Regional and facility-specific groundwater flow patterns for each hydrogeologic unit; and**

- vii) **Characterization of seasonal variations in each groundwater flow regime.**
- b. **Analysis of any topographic features that might influence the groundwater flow system.**
- c. **Based on field data, tests, and cores, a representative and accurate classification and description of each hydrogeologic unit which may be part of the migration pathways at the facility (i.e., the aquifers and any intervening saturated and unsaturated units), including:**
 - i) **Hydraulic conductivity and porosity (total and effective);**
 - ii) **Lithology, grain size, sorting, and degree of cementation;**
 - iii) **Interpretation of hydraulic interconnections between saturated zones; and**
 - iv) **Attenuation capacity and mechanisms of the natural earth materials (e.g., ion exchange capacity, organic carbon content, mineral content, etc.).**
- d. **Based on field studies and cores, structural geology and hydrogeologic cross sections showing the extent (depth, thickness, lateral extent) of hydrogeologic units which may be part of the migration pathways, identifying:**
 - i) **Sand and gravel deposits in unconsolidated deposits;**
 - ii) **Zones of fracturing or channeling in unconsolidated deposits;**
 - iii) **Zones of high permeability or low permeability that might direct and/or restrict the flow of contaminants;**
 - iv) **The uppermost aquifer: geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs; and**
 - v) **Water-bearing zones above the first confining layer that may serve as a pathway for contaminant migration, including perched zones of saturation.**
- e. **Based on data obtained from groundwater monitoring wells and piezometers installed upgradient and downgradient of the potential contaminant source(s), a representative description of water level or fluid pressure monitoring, including:**
 - i) **Water-level contour and/or potentiometric maps;**

- ii) **Hydrologic cross-sections showing vertical gradients;**
 - iii) **The flow system, including the vertical and horizontal components of flow; and**
 - iv) **Any temporal changes in hydraulic gradients, for example, due to seasonal influences.**
 - f. **Description of man-made influences that may affect the hydrogeology of the site, identifying:**
 - i) **Active and inactive local water supply and production wells (including construction details) within a 1 mile radius of the site, with an approximate schedule of pumping; and**
 - ii) **Man-made hydraulic structures (pipelines, french drains, ditches, unlined ponds, septic tanks, NPDES outfalls, retention areas, etc.).**
- 2. **Soils - The Facility shall conduct a program to fully characterize the soil and rock units at the site. The following information, at a minimum, must be collected and included in the RFI Report:**
 - a. **Soil Conservation Service (SCS) soil classification;**
 - b. **Surface soil distribution;**
 - c. **Soil profile, including American Standard Test Method (ASTM) classification of soils;**
 - d. **Transects of soil stratigraphy;**
 - e. **Hydraulic conductivity (saturated and unsaturated);**
 - f. **Relative permeability;**
 - g. **Bulk density;**
 - h. **Porosity;**
 - i. **Soil sorptive capacity;**
 - j. **Cation exchange capacity (CEC);**
 - k. **Soil organic content;**
 - l. **Soil pH;**
 - m. **Particle size distribution;**
 - n. **Depth of water table;**

- o. Moisture content;**
- p. Effect of stratification on unsaturated flow;**
- q. Infiltration;**
- r. Evapotranspiration;**
- s. Storage capacity;**
- t. Vertical flow rate; and**
- u. Mineral content.**

3. **Surface Water and Sediment** - The Facility shall conduct a program to characterize the surface water bodies in the vicinity of the facility. The following information, at a minimum, must be included in the RFI Report:

- a. Description of the temporal and permanent surface water bodies.
- b. Description of the chemistry of the natural surface water and sediments (e.g. pH, total organic carbon).
- c. Description of sediment characteristics, including:
 - i) Deposition area(s);
 - ii) Thickness profile; and
 - iii) Physical and chemical parameters (e.g., grain size, density, organic carbon content, ion exchange capacity, pH)

4. **Air** – The Facility shall provide information characterizing the climate in the vicinity of the facility. The following information, at a minimum, must be included in the RFI Report:

- a. Description of the following parameters:
- i) Annual and monthly rainfall averages;
 - ii) Monthly temperature averages and extremes;
 - ii) Wind speed and direction; and
 - iv) Evaporation data.
- b. Description of topographic and man-made features which affect emission patterns.

B. Source Characterization

The Facility shall collect analytical data to supplement and update the description prepared pursuant to Task I: A (Description of Current Conditions). The data shall completely characterize the wastes and the areas where wastes have been placed or released. At a minimum, this information shall include quantification of the following specific characteristics at each source area and documentation of the procedures used to make the determinations.

1. Source Area Characteristics:

- a. Location of unit/disposal or source area;
- b. Type of unit/disposal area or cause of source/release;
- c. Design features;
- d. Operating practices (past and present);
- e. Period of operation;
- f. Age of unit/disposal area;
- g. General physical condition; and
- h. Method used to close the unit/disposal area.

2. Waste Characteristics:

a. Type of waste/product:

- i) Hazardous classification (e.g., flammable, reactive, corrosive, oxidizing, or reducing agent);
- ii) Quantity; and
- iii) Chemical composition.

b. Physical and chemical characteristics:

- i) Physical form and description (e.g., powder, oily sludge);
- ii) pH;
- iii) General chemical class (e.g., acid, base, solvent);
- iv) Density;
- v) Viscosity;

- vi) Solubility in water;
 - vii) Cohesiveness of the waste; and
 - viii) Vapor pressure.
- c. Migration and dispersal characteristics of the waste/product:
- i) Sorption;
 - ii) Biodegradability, bioconcentration, biotransformation; and
 - iii) Chemical transformations.

C. Contamination Characterization

The Facility shall collect analytical data on groundwater, soils, surface water, and sediment contamination in the vicinity of the facility. This data shall be sufficient to define the extent, origin, direction, and rate of movement of contaminant plumes affecting all media. Data shall include time and location of sampling, media sampled, concentrations found, conditions during sampling, and the identity of the individuals performing the sampling and analysis. The Facility shall address the following types of contamination at the facility:

1. Groundwater Contamination - The Facility shall conduct a groundwater investigation to fully characterize all plumes of contamination at the facility and document the procedures used to characterize contaminant plume(s), (e.g., geophysics, modeling, pump tests, slug tests, nested piezometers). This investigation shall, at a minimum, provide the following information:
 - a. Specific origin (source) of each contaminant plume;
 - b. Description of the full horizontal and vertical extent of each immiscible or dissolved plume(s) originating from the facility;
 - c. Horizontal and vertical direction of contaminant movement;
 - d. Velocity of contaminant movement;
 - e. Horizontal and vertical concentration profiles of hazardous constituents;
 - f. Evaluation of factors influencing the plume movement; and
 - g. Extrapolation of future contaminant movement.
2. Soil Contamination - The Facility shall conduct and document the procedures used to investigate and characterize the contamination of the soil and geologic units in the vicinity of any contaminant release. The investigation shall include the following information:
 - a. Specific origin (source) of each soil contamination area;

- b. Description of the full vertical and horizontal extent of contamination;
 - c. Description of contaminant and soil chemical properties within the contaminant source area and plume (e.g. contaminant solubility, adsorption, leachability) that might affect contaminant migration and transformation;
 - d. Specific contaminant concentrations;
 - e. Velocity and direction of contaminant movement; and
 - f. Extrapolation of future contaminant movement.
3. **Surface Water and Sediment Contamination** - The Facility shall conduct and document the procedures used to investigate and characterize contamination in surface water bodies and sediments resulting from contaminant releases at the facility. The investigation shall include, but not be limited to, the following information:
- a. Specific origin (source) of each contaminant release to surface water and sediments;
 - b. Description of likely discharge locations of any immiscible or dissolved plume(s) originating from the facility, and the extent of contamination in sediments and surface water;
 - c. Horizontal and vertical direction of contaminant movement;
 - d. Evaluation of the physical, biological, and chemical factors influencing contaminant movement;
 - e. Extrapolation of future contaminant movement; and
 - f. Description of the chemistry of the contaminated surface waters and sediments (e.g. pH, total dissolved solids, specific contaminant concentrations).

D. Potential Receptor Identification

The Facility shall collect data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical analysis of biological samples may be required. Data on observable effects in ecosystems may also be required. The following characteristics shall be identified:

- 1. Local uses and possible future uses of groundwater within a one (1) mile radius of the facility:
 - a. Type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/non-potable, and industrial); and
 - b. Location of groundwater users, including wells and discharge areas.

2. Local uses and possible future uses of surface waters near the facility:
 - a. Type of use(s) (e.g. domestic municipal, recreational, agricultural) (e.g., potable and lawn/garden watering); and
 - b. Location of designated use area relative to the site and the contamination.
3. Current and potential human use of or access to the facility and adjacent lands, including, but not limited to:
 - a. Types of current and potential uses (e.g. residential, commercial, zoning/deed restrictions); and
 - b. Any use restrictions relative to the site and the contamination.
4. A description of the ecology overlying and in proximity to the facility including, but not limited to:
 - a. Location and size of each identified habitat (e.g., streams, wetlands, forested areas).
 - b. Description and complete species listing of each habitat's plant and animal (both resident and transient) communities.
 - c. Non-jurisdictional delineation of any wetlands present.
 - d. Database searches for the potential presence of any federal or state listed threatened, endangered, or rare species.
5. An evaluation of the pollutant impacts on the ecosystems/populations potentially exposed to contamination. This evaluation may be accomplished through the use of toxicity test (acute and chronic) population surveys and literature reviews.

E. Data Analysis

The Facility shall analyze all facility investigation data outlined in this Task and prepare a report. The objective of the data analysis section is to summarize the investigation and demonstrate that a sufficient amount of data in quality (e.g., quality assurance procedures have been followed) and quantity has been collected to describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support the Corrective Measures Study. EPA will review and approve or modify this submittal.

F. Site Conceptual Model

Facility shall synthesize data on environmental setting and contaminant three-dimensional distribution to produce a site conceptual model. EPA will review and approve or modify this submittal.

G. Risk Assessment (If required by EPA)

Facility may submit a work plan for conducting a site-wide Human Health and Screening Level Ecological Risk Assessment. The work plan shall outline the procedures and schedule for completing a risk assessment in accordance with EPA's *Risk Assessment Guidance for Superfund*, EPA/540/1-89/002, December 1989, and the *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments*, EPA-540-R-97-006, July 1997, and any subsequent updates, amendments or supplements. The Risk Assessment work plan must include:

1. A site-specific exposure conceptual model, which either graphically illustrates or states the impacted media and all the primary and secondary exposure pathways; and
2. A list of all contaminants of concern, standard exposure parameters, land use, methodologies for determining reasonable maximum exposure point concentrations, proxy determinations, and other statistical considerations.

Only information and environmental data that has been validated as representative of facility conditions may be used to describe the potential excess human health and/or ecological risk posed by the site.

In lieu of performing a site-specific Risk Assessment to evaluate risk and arrive at cleanup goals for this site, Facility may elect, with the concurrence of the EPA project manager, to defer to EPA for development of cleanup goals.

Coordination with EPA is required throughout the risk characterization process.

TASK III: REPORTS

At a minimum, Facility shall prepare reports for the following submissions, except Progress Reports. These reports shall present the results of Tasks I and II. These reports and any others shall be submitted in accordance with the schedule contained in the RFI Work Plan, upon its approval:

- A. RFI Work Plan (Task I)
- B. ~~RFI Report (Task II)~~
- C. Progress Reports – The Facility will, at a minimum, provide the implementing agency with signed quarterly progress reports.

These progress reports must contain the following elements, at a minimum:

1. A description and estimate of the percentage of the RFI completed;
2. Summaries of all findings in the reporting period, including results of any pilot studies;
3. Summaries of all changes made in the RFI during the reporting period;

4. Summaries of all contacts with representatives of the local community, public interest groups or state government during the reporting period;
5. Summaries of all contacts made regarding access to property;
6. Summaries of all problems encountered during the reporting period;
7. Actions being taken to rectify problems;
8. Changes in relevant personnel during the reporting period;
9. Projected work for the next reporting period; and
10. Copies of daily reports; inspection reports, laboratory/monitoring data, etc.

Facility Submissions

RFI Work Plan

RFI Report

Progress Reports

INTERIM MEASURES (IMs)
Statement of Work

PURPOSE

Interim measures (IM) are actions to control or abate threats to human health and/or the environment from releases, and/or to prevent or minimize the further spread of contamination while long-term remedies are pursued. Any IM must be consistent with and integrated into long-term remediation activities at the Facility.

Upon written request from EPA, Facility shall conduct Interim Measures to prevent, mitigate, and/or eliminate any migration or release of hazardous waste and/or hazardous constituents from Facility to prevent immediate or potential threat to human health and/or the environment. This process shall conform to EPA's *RCRA Corrective Action Plan*, EPA/520-R-94-004, OSWER Directive 9902.3-2A, May 1994, and other applicable EPA guidance. Facility will furnish all personnel, materials and services necessary to conduct the tasks described in this Statement of Work.

The level of detail EPA will require in IM submittals is dependent upon the complexity of the proposed activities and site-specific considerations. If the Facility can justify, to the satisfaction of EPA, that a plan or portion thereof is not needed or should be omitted to expedite timely implementation of an IM, then EPA may waive that requirement. The IM implementation process may include several tasks, including:

SCOPE

TASK I: INTERIM MEASURES WORK PLAN

TASK II: INTERIM MEASURES IMPLEMENTATION

TASK III: INTERIM MEASURES REPORTING

EPA may require Facility to conduct additional interim measures beyond those outlined herein if such interim measures are consistent with and necessary to support the purpose of this Statement of Work.

TASK I: INTERIM MEASURES WORK PLAN

Within thirty (30) days of written request from EPA, Facility shall submit an IM Work Plan that specifies the objectives of the IM, demonstrates how the IM will abate releases, and includes a discussion of the proposed technical approach, engineering design, engineering plans, schedules, budget, and personnel. The IM Work Plan should include an anticipated overall cost for the IM, to include five (5) years of operation and maintenance costs (or longer if final remedy implementation is projected to extend beyond a 5 year timeframe). The IM Work Plan must be approved by EPA prior to implementation. EPA will review and approve or modify this submittal. The IM Work Plan should also include the following components to supplement existing plans:

1. Preparation of or revisions to the site Public Involvement Plan to incorporate dissemination of information to the public concerning IM activities and results.

2. **Preparation of a Data Collection Quality Assurance Project Plan (QAPP) to encompass the data collection strategy, sampling and field measurements approach, data quality assurance and sample analysis needs for any sampling that will be conducted during design or implementation of the IM. The QAPP should be prepared in accordance with the EPA *Requirements for Quality Assurance Project Plans*, EPA QA/R-5, EPA/240/B-01/003, March 2001, and following EPA *Guidance for Preparing Quality Assurance Project Plans*, EPA QA/G-5, EPA/240/R-02/009, December 2002.**
3. **Preparation of Design Plans and Specifications which include but are not limited to the following:**
 - a. Discussion of the design strategy and design basis, including the preliminary design's ability to comply with all applicable or relevant and appropriate environmental and human health standards;
 - b. Discussion of technical factors of importance, including the efficacy of the proposed control measures and technology, the constructability of the design, and the use of acceptable construction practices and techniques;
 - c. Description and justification of any assumptions in the proposed design;
 - d. Discussion of possible sources of error and consequences for operation and maintenance of the IM;
 - e. Detailed drawings of the proposed design, including qualitative and quantitative flow sheets, facility layout drawings, and utility drawings; and
 - f. Identification of materials, equipment, and specifications.
4. **Preparation of an Operation and Maintenance Plan to cover both implementation and long-term maintenance of the interim measure. The plan shall include the following elements:**
 - a. Equipment start-up and operator training needs;
 - b. Description and schedule for normal operation and maintenance, and anticipated replacement schedule for equipment and system components;
 - c. Description of routine monitoring and testing needs, including sample size, sample and test locations, frequency of testing, acceptance and rejection criteria, plans for correcting problems, and Quality Assurance/Quality Control(QA/QC) requirements;
 - d. Description of the inspection activities that will be used to monitor the construction and/or installation of the components of the IM. The plan shall include the scope and frequency of each type of inspection.

Inspections shall verify compliance with all environmental requirements and health and safety procedures. In addition to oversight inspections, the Facility shall conduct the following activities:

- i. Pre-construction inspection and meeting.
 - ii. Pre-final inspection to determine whether the project is complete and consistent with the contract requirements and the EPA-approved IM. Outstanding construction items will be identified. Treatment equipment will be operationally tested by the Facility. The Facility will certify that the equipment has performed to meet the purpose and intent of the specifications. The pre-final inspection report should outline the outstanding construction items, actions required to resolve them, and the date for final inspection.
 - iii. Final inspection to consist of a walk-through inspection of the project site. The final inspection should verify that the outstanding construction items identified in the pre-final inspection have been addressed.
 - e. Description of reporting mechanisms and records, such as emergency reporting, daily logs, personnel and maintenance records, and periodic progress reports;
5. Preparation of a detailed **Project Schedule** for construction and implementation of the IM which identifies timing for initiation and completion of critical path tasks. Facility shall specifically identify dates for completion of the project and major interim milestones. The Project Schedule shall be submitted with the Final Design Documents described below.

TASK II: INTERIM MEASURES IMPLEMENTATION

Upon EPA approval of the Interim Measures Work Plan, the Facility shall construct and implement the IM in accordance with the approved design, schedule, and operation and maintenance plan.

TASK III: INTERIM MEASURES REPORTING

Documentation of IM activities shall include, but not be limited to the following: progress reports, final design documents, IM construction completion report, and annual IM reports.

1. **Progress Reporting** – The Facility shall at a minimum provide EPA with signed, monthly progress reports containing:
 - a. A description and estimate of the percentage of the IM completed;
 - b. Summaries of all findings during the reporting period;
 - c. Summaries of all changes made in the IM during the reporting period;

- d. Summaries of all contacts with representatives of the local community, public interest groups, or the state of federal government;
 - e. Summaries of all problems or potential problems encountered during the reporting period;
 - f. Actions being taken to rectify problems;
 - g. Changes in personnel during the reporting period;
 - h. Projected work for the next reporting period; and
 - i. Copies of daily reports, inspection reports, laboratory data, etc.
2. **Final Design Documents** – The Facility shall submit the Final Design Plans complete with drawings and specifications. The quality of the design documents should be such that the Facility would be able to include them in a bid package and invite contractors to submit bids for the construction project.
3. **Interim Measures Construction Completion Report** – At the “completion” of the construction of the project (except for long-term operation, maintenance, and monitoring), the Facility shall submit an IM Construction Completion Report. The report shall document that the project is consistent with the design specifications and that the IM is performing adequately. The report shall include, but not be limited to the following elements:
- a. Synopsis of the IM and certification of the design and construction;
 - b. Explanation and justification of any modifications to the IM plans;
 - c. Identification of the agreed criteria for judging the function of the IM;
 - d. Results of facility monitoring indicating that the IM will meet or exceed the performance criteria; and
 - e. Explanation of the operation, maintenance, and monitoring to be undertaken at the facility.

This report shall include the inspection summary reports, inspection data sheets, problem identification and corrective measure reports, block evaluation reports, photographic reporting data sheets, design engineers' acceptance reports, deviation from design and material specifications, and as-built drawings.

4. **Annual Interim Measure Reports** – Facility shall submit annual IM Reports that evaluate the effectiveness of the IM.

Facility Submissions

IM WORK PLAN

PROGRESS REPORTS

FINAL DESIGN DOCUMENTS

IM CONSTRUCTION COMPLETION REPORT

ANNUAL IM REPORTS
